

SYDENHAM MED. ASSOC.

HEALTH INFLUENCES

OF THE

CLIMATE OF VINELAND,

NEW JERSEY.

A SERIES OF PAPERS

PREPARED BY THE

SYDENHAM MEDICAL ASSOCIATION,

of Vineland, N. J.

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1874.

F. P. CROCKER, PUBLISHER,
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PREFACE.

A place of health, where the climate is mild and equable, and where the comforts of invalid life are to be obtained without the necessity of traveling a great distance from the centre of population, is a desirable object.

That there are localities in Northern Latitudes where the climate is mild is an established fact—instance, Torquay, in England and some other places. Sterne remarked that within 20 miles of his home in England, he could enjoy a variety of climates, and go to one place where the winters were mild, and to another where the summers were cool. Torquay not long since was a little village comparatively unknown:—now it is a great city: and all this has been brought about by its health influences and mildness of climate in close proximity to winter frosts and fogs.

Vineland, New Jersey, is just such a place as this; and, as at Torquay, the truth is of purely accidental discovery, being the practical experience of the thousands of people who have gone there. Though this fact has only of late years become prominent, yet it was known many years ago to some eminent physicians that the locality of Vineland had peculiar advantages, climatic and otherwise, for the cure of diseases. The eminent Dr. Rush, of Philadelphia, in old Revolutionary times, remarked upon this, and sent many of his patients to this locality, where they could enjoy balmy breezes in winter, and a pure atmosphere, perfectly free from malaria in summer.

It is all-important that patients should go where they can have the comforts of life. They cannot have these far from home and friends and the centres of civilization. There is a vast deal in being within so short a distance of Philadelphia and New York as to be able to go to and from these cities and return the same day at a reasonable hour. From a medicinal point of view there is a vast deal in being where all the most delicious fruits, vegetables, and other productions of the Temperate Zone are to be easily obtained. No place can be found that will excel Vineland in the delicious fruits produced there, commencing with the Strawberry in early Spring, and continuing with all the fruits of the year—peaches, grapes,

pears, melons, &c. The productive character of the soil also ensures good grass, (which means good milk), the best of vegetables, and good poultry, eggs and meats. The climate is so mild that the land can be ploughed the entire winter; any interruption to this is exceptional. It also enjoys the blessed advantage of being near the sea, from which so much that is good for man is obtained. Connected by railroads and country roads with both the Atlantic Ocean and the Delaware Bay, there is always a supply of the most delicious oysters, clams, crabs and fish to be had almost fresh from the water. It is within an hour or two by railroad of the famous Maurice Cove oysters, and the fine salts from Cape May Sound. The products of the ocean are essential to the health. They contain phosphorus and the phosphates, and these are frequently *specific* in cases of brain diseases and nervous prostration. Add these things to pure air, soft and sweet water, and a delicious climate, and it is not to be wondered at that so many cases of disease given up as hopeless, should be cured in Vineland almost without the use of medicine. The effect of the medicinal properties to be found in oysters, crabs and sea-fish upon persons who have been living away from the sea-board is something remarkable. This brings to mind the remark of some great philosopher that the sea was so near a friend to the life of man, that the highest development of our species had always been found near its shores. The greatest men of genius—poets, soldiers, statesmen, historians, *savans* and mechanicians from the beginning of the world to the present time have been produced near the sea.

This, however, is a digression. To come back to the subject, it has been ascertained from experience that to go from a northern latitude to an extreme southern latitude is often productive of such prostration in the system of an invalid as to produce death, where a more moderate change might have been productive of great benefit; also, that to go from a temperate climate to one that is cold and fierce, such as that of the Northwest, is often attended with like consequences. It is simply reasonable that a more moderate change to a place which admits of out-door exercise in the Winter season, as in Vineland, when combined with other health influences, is far more rational. In the far South the variation of the temperature between the day and the night is so great as to be often killing; and in the far North-West to breathe an atmosphere for months that rises from a snow-bank is to many equally injurious.

It was first ascertained in Vineland that actual cases of the worst forms of chronic diseases were affected simply by living in this place. The next question that came up was the cause of these cures, and this subject will be found treated by some of the best physicians of the place, who in a series of papers give not only their theories, but their actual experience, about which at least they can be certain.

“Sydenham Papers.”

No. 1.

By DR. FRANKLIN LANE.

Ao better thing can be said of any locality than that it is the abode of health. A reputation for healthfulness rapidly extends itself, and is certain, sooner or later, to attract from all sections of the country, multitudes of persons suffering from the effects of disease, all seeking the recuperation of their shattered constitutions. Such a good name, in fact, if well founded, is quite enough of itself alone, to secure the rapid growth and permanent prosperity of any place located conveniently for the approach of the sick and debilitated.

That acute diseases, with perhaps a few exceptions, and a large percentage of chronic affections, assume in Vineland a modified character, and pursue a milder and less dangerous course than in other parts of the country, is a fact which the mass of the people, uneducated to a knowledge of medicine, have generally recognized. And this, it may be remarked, is the opinion of persons gathered here from all parts of the United States, and therefore familiar, in the aggregate, with the sanitary condition of all sections of the country.

Such a state of things cannot exist without a definite cause, or it may be a series of causes, a part positive and a part negative, all tending to the same result. In searching for these causes, we should first of all inquire if there are any peculiarities antagonistic to disease inherent in the climate. This question of climate relates to the temperature of the atmosphere, its humidity, the variations in its pressure, its purity, or admixture with deleterious exhalations, the distance of a place from, and altitude above the ocean; in short to all those conditions and perturbations which make a sensible impression upon the organs of the human system.

Vineland is situated but twenty miles from the Delaware Bay on the south-west, and thirty miles from the ocean on the east; while its elevation above tidewater, at the centre of the town, is only one hundred and ten feet. In winter, the winds which sweep in from the Atlantic are unquestionably softened by the waters of the Gulf Stream, while in summer their fierce heat is doubtless tempered by the millions of tons of vapor which they bear along both from the ocean and the bay.

I am not disposed to pass over hastily this providential location of the town. Near the fortieth parallel of latitude, just far enough from those large bodies of water to escape the raw penetrating fogs which render the vicinity of Boston so disagreeable in Spring and Autumn, and yet sufficiently south to be removed from the excessive cold of winter, so common and persistent in that climate, and at the same time far enough north to avoid the intense summer heat which pervades the more southerly Atlantic States, it would seem that the happy medium between the extremes of heat and cold could only be found in this immediate vicinity, all the laws of climate conspiring to make this the most temperate point on our, whole eastern coast.

From the published tables we learn that the absolute range of temperature at Vineland, for the year, is 102 deg. This is a wide range, and at first thought seems somewhat inconsistent with a healthy climate. But when it is borne in mind that the highest and lowest ranges of temperature are maintained but a few hours in the year, it must be seen that this fact can have little influence upon the question of health. In Albany N. Y., the absolute range is 131 deg., while in Barbadoes, W. I., the range for the year is only 14 deg., and in Surinam, Dutch Guiana, it is but 20 deg.; yet no one would consider Barbadoes or Surinam healthy places. It is apparent, therefore, that a low yearly range of temperature is not, *per se*, any evidence of the healthfulness of a locality.

The *mean* temperature of any place, for the year, is a matter of far greater importance. We find this at Vineland to be 55°06. *This is almost exactly the point marked "temperate" on the thermometric scale.* The mean at Boston is 48 deg., seven less than here; at New York 51 deg., four less; at Philadelphia, 50 deg., five less; and at St. Augustine, Fla., 67 deg., twelve higher, and at Key West it is 76 deg. In fact we are situated upon "the isothermal line, or line of equal heat, indicating a mean temperature of 55 deg., which passes through Baltimore and Washington, circles round the southern boundary of West Virginia, intersects the northern boundary of Kentucky, and strikes St. Louis, leaving Philadelphia and Cincinnati a very little north of the line."

Wherever the mean rises above our temperate 55 deg., there you will find a climate too hot for the comfortable subsistence of the white man during the heat of summer. And where the mean falls below that point, the winter will be found too severe for persons of a naturally delicate or of an accidentally impaired constitution. But where the mean is found just at the temperate point, there we have one of the most important desiderata for the comfortable existence, *throughout the entire year*, of persons of a feeble and debilitated constitution.

Another important point, in the question of climate, is the amount of the annual rain-fall. We find, by averaging the tables for the last three years, that 52.104 inches of rain fall yearly in Vineland. In a locality where the atmosphere is frequently loaded with a large amount of moisture in the form of fog, or where the soil is heavy, preventing the rapid absorption, this amount might be found excessive, but the case is quite different here, where the porous, superficial stratum drinks up the heaviest rain-fall in a few hours. In Lima there is no rain throughout the year, yet the city is generally healthy. Vera Crüz has an annual fall of 183 inches, and there

various pestilential maladies pursue their work of devastation. Boston has 44 inches, eight less than Vineland: New York 42 inches, ten less; Philadelphia 43, nine less; Washington 41, eleven less; Minnesota 44, eight less; and Sitka, Alaska, 90 inches, thirty-eight more.

It is only by the hygrometer that the amount of moisture suspended in the atmosphere can be measured, and the question of a dry or wet climate settled. By this instrument we learn definitely that the climate of Vineland is neither wet nor dry, but that it holds the healthy mean between the two extremes.

Owing to the rapid absorption above referred to, water descending in the form of rain does not return into the atmosphere immediately, but is conducted away, through subterranean channels, into the neighboring streams, and thence finds its way to the ocean. It is from this cause, likewise, that we have no permanent pools in our fields, and, except when the frosts are making their escape, no mud, as in northern towns, in our highways. As a result, we escape those conditions under which, according to the popular theory, deleterious miasmatic exhalations are generated. At all events, *not a single case of intermittent fever, that baneful malady of the South and West, has ever originated in Vineland.* This is the crowning glory of our climate. A disease which renders Long Island and many delightful localities in the vicinity of New York, almost uninhabitable; which has spread terror throughout the cities of Baltimore and Brooklyn, during the past year, carrying mourning into many of their families; a disease which expels the Northern man from a large portion of the territory of the South and from the fertile prairies of the West; a disease, indeed, which is the great enemy of the traveler over one-third of the inhabitabie globe, which stalks along the royal approaches of Rome, a thousand times more terrible than were the hordes of Attila, for they were but the authors of a brief holocaust to barbarism, while this is a perennial foe, invisible yet omnipresent, seizing indiscriminately upon old and young, male and female, vampire-like, sucking their blood to the death, unless the bitter antidote is applied:—this foe of our race, has never found foot-hold here.

From the ravages of this dread enemy of mankind, this prolific land of fruit and flowers is entirely exempt. Who shall say Providence has not designed this fertile plain, lying between the Delaware and the Ocean, as a resort for the unfortunate invalids of every section of our vast country?

It is yet an open question, how much the health of a climate is affected by electricity in the atmosphere. We are informed by philosophers that moist air rubbing against the surface of the earth, becomes charged with positive electricity. Also that "evaporation," especially from water containing salt, as the ocean, "is the principal source of atmospheric electricity. Accepting this rule of Prof. Loomis as correct, it will abundantly account for the electrical purification which prevails in Vineland.

Another element of health in this favored region, is the pure, soft water which abounds throughout the entire tract, some twenty or thirty feet below the surface. As no community can long exist in a state of health without a plentiful supply of this article in its purity, we may refer with special gratitude to the bountiful provision which Nature has made in this direction. The coolness of the water, when drawn from our wells in the height of summer, never fails to be noticed with delight by the stranger.

We are assured by the highest authority, that all a man hath will he give for his life. Yet here on the teeming Jersey shore, only a few hours ride from our largest Eastern cities, almost within hearing of the ceaseless pulse-beats of the Atlantic, it is believed this inestimable treasure may be obtained, as a free gift, by every individual afflicted by a curable disease and this frequently without the aid of medicine, and in all cases with but a moderate amount. If needed, the testimony of hundreds now residing here, who believed themselves, before coming, to be incurably diseased, may be obtained, as well as those of hundreds of others who have left the tract.

The diseases over which the climate appears to exercise a peculiarly restorative influence, are those of the pulmonary organs, chronic rheumatism, the various kidney complaints, those protean disorders usually classed under the title of nervous affection, and especially the multiform sufferings of females known as diseases of women.

In winter, the tonic and restorative effects of this climate upon persons suffering from diseases of the lungs, are very positive and striking, in contradistinction to the debility and languor induced by the climate of Florida or the supertonic properties of that of Minnesota.

The question finally arises; Has Vineland any disease which can be fairly and justly attributed to its locality, to its climate, or to any of those mysterious circumstances by which the average length of life in a community may be materially abridged?

So far as medical science is able to discover, this question may be boldly answered in the negative. With the exception of a light acclimating fever of a bilious type, which occasionally prostrates individuals coming from more northerly latitudes, and which is sometimes more or less prevalent in the autumnal months, and the usual exanthematous diseases of childhood, we may claim for this region entire exemption from all complaints that do not result from defective constitution, from the infraction of well-known laws of health, or from the natural decay of the human system.

"Sydenham Papers."

No. 2.

BY DR. JOHN INGRAM.

W ineland is situated midway between the Atlantic Ocean and Delaware Bay, in latitude 39 Deg., 38 Min., on a gently undulating plateau of cretaceous and sandy loam—the water shed tending to the Delaware Bay, mostly in a South westerly direction: and is about 119 feet above tide level.

The water is soft, and unsurpassed for its sanitary effects on the system, and can be used for *every* variety of purpose, washing, cooking, &c., as it comes from the well. The average depth of wells on this tract is about thirty feet, and temperature of water about fifty deg., and in percolating through a substratum of calcareous and sandy material, possesses qualities for purifying the blood, imparting health and tone to enfeebled systems in a manner that may challenge the world.

The drainage of the land here is by the Maurice River and its affluents emptying into the Delaware Bay. The various streams have a beautiful bed of clear white sand, and the banks of which are lined with cedar, pine, maple, sweet gum, oak, &c., and although many of these streams widen out into level marshes of large extent, yet *no malarial* influences are found here. After a residence of nearly seven years in this locality, *not a single case of indigenous intermittent fever* has come within my observation, and consequently few if any cases of a strictly bilious type of disease are met with here.

Let any other equal area of Western country be settled as long as this has been, and cases of intermittent and re-intermittent fever might be counted by the score or hundred.

This immunity from malarious and bilious diseases marks the countenance of every resident of the place; and the contrast in physical appearance of the inhabitants of this region and a like number in the aguish districts of Illinois and Michigan, would constitute a feature sufficiently marked by which the respective inhabitants could be told.

That such is the case the tables accompanying this will show. In New Jersey, the number of fatal cases of intermittent and re-intermittent fever for one year was 155; in Michigan in a like population the number was

just double; in Ohio it was four times; in Indiana nearly six times; in Missouri over nine times. The same general fact may be shown to exist with reference to Illinois, Virginia, Alabama, and other States. Such diversity in the number of fatal cases from the same disease, in a nearly similar population, but in very different locations, points out the fact that bilious diseases do not have their habitat in this region.

With regard to Typhoid fever, the table shows in a population of about three-fourths of a million, there was only 159 fatal cases in one year, or in the ratio of twenty-one in every ten thousand of the population.

This certainly is not a very formidable ratio:—in New England with a population of nearly four millions souls, the ratio of typhoid fever deaths is nearly three times greater than in New Jersey, and by a *very* close calculation, by a *comparison of population*, the ratio of fatal cases of Typhoid fever in Ohio, Ind., Ill., Mich., Va., Ala., Mo., &c., is very nearly the same as in the case of New England: i. e. compare a *like number of inhabitants* in each section of country, and the ratio of fatal cases is as three to one in favor of New Jersey, or in other words for every death from Typhoid fever in N. J., there are three from the same cause in the sections named.

This shows unmistakeably that a set of influences operate on the human system in this country, to maintain a *high physical tone*, such as other regions do not possess.

Let us, then, inquire into some of the peculiarities of this region that make it healthy, and first as to climate.

From instrumental observations, extending over almost the entire period of my residence here, I find the hygro-ometric or moist condition of the atmosphere to be very high, as compared with other locations. A glance at any good map of New Jersey will help to account for this state of superior humidity—we are situated almost on a peninsula, and thus let the wind blow from any direction, except North and North-West, and it blows over a body of water. Actual observation shows that N. E., E., S. E., and S. W. winds predominate very largely here. These watery surroundings and prevailing winds no doubt impart that genial blandness to the air which is so invigorating to the system of the invalid, particularly to those suffering from pulmonary disease.

This state of the atmosphere, the unlimited supply of superior fruits, added to the extraordinary qualities of the water here, give a tone and vigor to a debilitated system that lift both body and mind from their lethargy, lending a cheerful and invigorating glow of health that tells the doctor “you can’t get rich here.”

What a climate, possessing the agreeable alternations of abundant moisture with elevated temperature, supplemented by the invigorating breezes of the ocean, is for consumptives, the medical literature of Florida, Cuba, and the Bahamas, abundantly show.

That tubercle comes from lowered vitality and depressed nervous energy is a truism no medical man will deny. Then place the patient so affected under a set of conditions calculated to impart purified blood, renewed nerve power, with the consequent improved vitality, and will not the development of his tubercle cease? Nay, more, will not the health forces so prevail over their opposite that a new set of conditions be the result?

That such a set of conditions exist here the following tabular statement will make clear.

In 1860 the aggregate population of New England was a little over three millions, and the number of deaths from consumption was ten thousand eight hundred, (10,800), or one death in every two hundred and eighty (280) inhabitants; while in New Jersey, in a population of six hundred and seventy-two thousand and seventeen, (672,017), the number of deaths from consumption was thirteen hundred and fifty, (1350), or one (1) in five hundred, (500); it must, however, be borne in mind that a large number of deaths from consumption in New Jersey are of cases imported in the advanced stages of the disease. I think it safe enough to say that *three hundred* are imported cases; this leaves 1050 cases indigenous to New Jersey, or one case from consumption in every six hundred and forty (640) inhabitants.

By a like method of comparison it can be easily shown that the climatic influences of this region are very favorable to cases of *acute* inflammation of the lungs, or *pneumonia*. From the following table it appears that in Alabama one person in three hundred and eighty-five (385) dies with pneumonia; in Missouri one in seven hundred and sixty-six (766); in Indiana one (1) in eleven hundred and sixty six, (1166); in Massachusetts one (1) in twelve hundred and twenty-nine (1229); in New England, generally, one in fourteen hundred and thirteen (1413); while in New Jersey only one in (2410) *twenty-four hundred and ten*.

From the same table it appears that in New England, of cholera infantum, a very formidable disease among children, one dies in every twenty-seven hundred and eighteen (2718); while in New Jersey, one dies in five thousand and fifty-two (5052):

	N. J.	N. E.	Ohio.	Indiana.	Missouri.	Alabama.	Mass.	Mich.	Pensy.
Cholera Infantum...	133	1,127	260	156	176	100	403	321	378
Consumption.....	1,350	10,800	3,60	1,80	1,302	596	4,845	1,187	5,011
Intermittent fever..	28	14	199	365	609	189	5	93	73
Remittent " "	127	717	413	436	797	441	260	216	515
Typhoid " "	159	1,865	1,038	963	1,056	836	700	327	1,344
Dropsy.....	260	1,588	657	346	406	597	573	228	1,050
Pneumonia.....	279	2,116	1,311	1,159	1,406	1,377	1,001	566	1,120
Scarlatina.....	694	2,048	2,417	1,437	896	251	800	657	3,156
Dysentery.....	139	1,021	530	584	433	313	565	231	722
Diphtheria.....	16	82	54	52	68	47	27	2	245
Heart Disease.....	190	1,502	387	137	137	84	705	117	649
Rheumatism.....	35	406	114	70	69	86	73	23	151
Population in 1860.	672,017	3,135,000	2,339,511	1,350,428	1,182,012	964,201	1,231,066	749,113	2,906,215

	Illinois.	Virginia.
Cholera Infantum...	345	166
Consumption.....	1,948	2169
Intermittent fever..	464	68
Remittent " "	682	329
Typhoid " "	1,183	1,056
Dropsy.....	412	973
Pneumonia.....	1,357	1,605
Scarlatina.....	1,698	601
Dysentery.....	845	728
Diphtheria.....	41	270
Heart Disease.....	142	271
Rheumatism.....	78	112
Population in 1860.	1,711,951	1,596,318

The data for the above table are obtained from the Mortuary Statistics published by authority of the United States Government, and may be relied upon as authentic, and can have no leanings to anything but truth. Any person entertaining doubts as to the accuracy of the calculations based on the above table can very readily test the matter by a simple calculation, and I am not afraid of results.

The statistical method of determining the sanitary qualities of a given locality is that which is mainly relied on by the highest medical authorities in this or any other country, and hence I do not hesitate to submit the calculations based on the above tables, to the candid judgment of all intelligent minds, medical or otherwise.

By pursuing the same method of inquiry, with consumption, fevers, &c., a *like favorable set of results* will be obtained for Scarlatina, Dysentery, &c., including all embraced in the table.

In regard to Rheumatism, only one fatal case in nineteen thousand and two hundred (19,200) inhabitants in New Jersey, while in Virginia and Alabama there was one in eleven thousand: only in Michigan was there a notable immunity from this disease over New Jersey, and there the conditions as to aqueous surroundings are quite analogous to New Jersey, or at least to Southern New Jersey.

In confirmation of these general conclusions, a few cases of those falling within my own personal observation may be cited without violence to modesty.

These cases show in a marked degree how readily some of the most obstinate diseases yield to treatment here, and that, too, oftentimes in a number of days that elsewhere would require a corresponding number of weeks. Why? The disease, the subject, the remedy, and the prescriber are the same, but the *results are different*, and no intervening link can be found beyond those of climate and water.

Case 1, S. B.—A case of chronic dysentery of seven weeks duration, from C—e county, N. Y. Here were blended in a very marked degree, the peculiar features of "dysentery," that most frightful of diseases, with tuberculosis of the mesenteric glands: extreme emaciation of the entire frame, hectic flush in countenance, rapid pulse, cold extremities. These symptoms implanted on a decidedly serofulous constitution, would seem to indicate speedy dissolution.

After two weeks residence here, with careful nursing, and a *very little* treatment, the whole features of the case changed for the better: bowels a more healthy tone, appetite regained, the physical and mental condition completely new; returned home in four weeks praising Vineland and promising to return for good when business matters would permit.

No. 2, S. D.—A case of chronic bronchitis; two years duration, with frequent paroxysms of asthma; from C—, N. H. In this case were combined the usual features of bronchial inflammation, aggravated by the irritated effects of exposure to dust, vapors, &c., from machinery: blood had been expectorated from the chest at several times, appetite poor, body considerably emaciated, harassed by a continual cough, the courage almost gone. The alternative of Minnesota, Vineland, or the grave seemed to rise up before him for a speedy decision. He chose Vineland, and in one week the asthma was gone:—and to step aside for a little, the influence of this climate on asthma is so very remarkable that case after case can be cited in proof of the cures effected here by it alone:—but to return; one month's residence relieved him of a troublesome and irritating cough almost entirely, no more bloody expectoration or night sweats; he took daily rides over beautiful roads, inhaled the fresh ocean breezes and the spirit of the place, took courage and got well—is now a Vinelander and can do nearly as much as he ever could.

No. 3, R. M.—A case of erysipelas of a chronic character, extending over a period of three years; from Indiana. This case had assumed very grave symptoms, invading the face and scalp, also occasionally other portions of the body, at times the membranes of the brain would be affected, when wild delirium would result—had been treated by Regulars and Quacks of all kinds, but with little or no benefit. In less than one month after landing here he was entirely well.

No. 4. This is intended to include a number of cases of diphtheria with its varied sequelæ.

Several individuals came under my care who had suffered from this disease, and as a consequence, were greatly debilitated, appetite poor, much emaciated, generally greatly depressed in spirits. Such cases show in a pre-eminent degree the efficacy of a change of climate: all were benefitted by the change, and unless some other complication of disease interfered, all got well, and with *very little* treatment beyond a generous diet and plenty of out-door exercise, with cheerful surroundings and *positive* assurances of recovery, which is always beneficial to the despondent.

In addition to the above I might cite cases of dyspepsia by the score who were all more or less debilitated in body and mind, as such cases usually are.

For such nothing seemed so grateful or beneficial as the fruits grown here, with cheerful companions, a properly regulated diet, and with a few weeks residence every one was benefitted; many of them entirely cured.

The morals of the place lends the magic of its elevating influence—here we are in direct communication with New York, Philadelphia, and all the large cities of our country, telegraphs, hotels, beautiful drives, diversified and matchless scenery, churches, schools, lectures, refined and highly cultivated society, in short, whatever can minister to the necessities, the desires (except whiskey), the comforts or the luxuries of life can be found in Vineland.

The following table expresses the relative Humidity of the places named, viz. the average percentage of moisture in the atmosphere by observing it three times a day throughout the year, and from the observations take the average of all. When there is a high Relative Humidity, this prevents injury to crops which might ensue from continuous drought—in addition to this economic value of the high humidity, there is a sanitary value which is vastly superior to the other.

To enter into the discussion of the results obtained from dry air of a low temperature, and moist air of a high temperature, is not the intention; it is not denied that dry cool air is very beneficial in a great many cases, as for instance in sluggish habits, but in the great majority of cases of lung disease they are of the wide-awke, sanguine and nervous temperaments, where there is too much activity, and consequently too much waste of the fatty element of the body.

One of the chief elements in the treatment of tuberculous patients is to save the albuminoid tissues from disintegration as extensively as possible, then to diminish the demand for the generation of animal heat by supplying it artificially.

These conditions are more or less met in a moist and warm air, and hence we claim for this locality the existence of those conditions which theory and experience combine to save the consumptive.

RELATIVE HUMIDITY OF DIFFERENT LOCATIONS AS COMPARED WITH VINELAND.

Madison, Wisconsin,	- - -	57	Savannah, Georgia,	- - -	75
Appleton, Wisconsin,	- - -	63	North Attleboro, Mass.,	- - -	77
Tuscaloosa, Alabama,	- - -	72	Zanesville, Ohio,	- - -	80
Austin, Texas,	- - -	74	Jacksonville, Florida,	- - -	88
Baltimore, Maryland,	- - -	74	Vineland, New Jersey,	- - -	87

From this table it is quite obvious that a marked difference exists between Madison and Jacksonville, to each of which the poor victim of tubercle is advised to go. That advice should be based on a clear apprehension of the temperament of the patient as well as the stage of the complaint.

To advise a man to go to Madison, Wis., with a low grade of vitality, and with scarcely any power to generate animal heat, is, to say the least, very doubtful policy; yes, more, it is cruel and must disappoint.

Why the hygrometric difference between Madison, Wis., and Vineland? The answer is, the former is *emphatically* continental—the atmosphere is dry [57], no aqueous surroundings, no winds laden with moisture pass over its surface, the earth is iron, the air in summer a furnace. Vineland is on a peninsula, surrounded by water, and as the immortal Prof. Bache has shown in his lectures, on the Gulf Stream.

No. 3.

BY DR. CHARLES BREWER.

It is with some misgiving that I approach a subject so intrinsically important because of its scientific merit, and again one doubly interesting to many of you, to whom having come to Vineland invalids, but now restored to the full vigor of manhood and womanhood, I may well say, health is wealth.

Although proud of the profession which I here to-night represent, as second only to that of the Herald of Zion, who standing on the watch towers of her fair city, points invitingly to the fair fields and sunny skies of that promised land, the inhabitants of which are never sick: although aware that the educated physician is enabled to call to his aid in his efforts to relieve the sufferings of humanity, the laboratory of the chemist, the apparatus of the philosopher, and in fact almost every improvement in the arts and sciences; still, conscious that because of these greater advantages, much more is expected from him in accounting for the remarkable phenomena developed in physiological and pathological conditions of the human system, and in unraveling the tangled thread of the Great Mystery of Life, it is, I say then, with much misgiving that I approach the intricate subject now before me.

Before attempting to account for facts—averred to be such—our first inquiry should be, are the asserted circumstances actualities? One of the Georges of England, whose head, historians tell us, was not as strong as we would generally like that of our rulers to be, when appealed to by the perplexed philosophers of his Court in their discussion as to why a tub of water of a given weight would not be increased in weight by the addition of a fish, astounded them by the counter inquiry, “But is it so? Bring the tub and the fish, and we will see.” In approaching this subject, “what we want” in the words of a most distinguished novelist, “are facts”. And here, I must acknowledge that the opportunities of many around us, actively engaged in the profession of medicine, which I am not, are much more extended than are my own for collating these facts. Having settled in your township several months ago, broken down in health by the exhausting labors of a profession which I have assiduously pursued for fifteen years, and

which I had been obliged to abandon, so enfeebled in constitution as often hardly able to be upon my feet for a few hours at a time: my present physical ability to perform the arduous toil of the farmers' long day is in itself a fact worthy of attestation. But when I look around me and recognize the faces of so many with whose medical history I have been made acquainted by most reliable authority, and upon yet many more whose oral testimony has been given, and unsolicited in the presence of us all—living exemplifications of the startling revolutions from disease to health which have occurred in their respective cases, every unbiased mind with my own must be forced to the conclusion that in the many causes which combine to constitute the remarkably healthy climate of Vineland, not a few among the many must be of a local character. The physician, whose definition I should give, as one educated and practised in the art of observing and questioning nature, and of assisting to a conclusion by his remedies her natural indications for the cure of disease, must carefully reason from cause and effect, and with him every sequence must not necessarily be a consequence, else his error may be a fatal one.

I have listened with satisfaction to the views of Dr. Tuller, one of the oldest and most able of the resident physicians of this place, on the remarkable healthfulness of the climate of Vineland. He, like myself, acknowledges having received the benefit of that climate in his own family; and with that true candor and magnanimity which would do credit to every physician, has given the great *ris medicatrix naturae* her own full share of credit, in the accomplishment of many favorable issues he reported. The causes alluded to by him were many: many more remain and will remain to be alluded to, when I shall have exhausted your patience and the seats in this hall been vacated.

In referring to these causes I specially desire to call your attention to the influences of Electricity as a climatic agent in the promotion of the vegetable and animal life of Vineland.

The wonderful influences of this agent, electricity, in the promotion of the healthy and rapid development of vegetable life is no longer a disputed but an established fact. In the circulation of the sap, and in the chemical changes being undergone in the quiet laboratory of the assimilating functions, by which I mean the process of the conversion of the elements by which it is surrounded into plant force and substance, and the exhalation of that which has become effete, electricity is a usual and prominent phenomena. It is, in other words, a *sine-qu-a-non* to the existence of plant life.

A lady of the Floral Society would tell you, in placing her fingers to the delicate leaves of the mimosa, or sensitve plant, this, and to a certain extent, all other plants are electrical batteries, all holding certain electrical relations to the earth from which they grow, and to the atmosphere by which they are surrounded. How strikingly plants, vegetables, &c., thrive under the influence of machine electricity, or what I may be allowed to call, in contradistinction to that manifested in the ordinary phenomena of nature—artificial electricity—has been well established by repeated experiments extending from the year 1746 to the present time. For the information of some who may not have had access to the results of the experiments referred to I will beg your indulgence whilst I allude to them briefly.

Ext. : (Report on Agricultural Meteorology. Dept. of Agriculture). In the Autumn of 1746, Dr. Maimbray, of Edinburgh, electrified two myrtles, and found they put forth small branches, some inches in length, and even came into blossom during the month of October. This did not happen to myrtles not electrified.

In the months of April and May Jallabert (Experiences sur l'Electricite, Geneva 1718) electrified various plants two hours every day, regularly exposing them to the open air after the operation, and found that all of them grew rapidly, and flourished remarkably. In the fall of the same year, he electrified also bulbs of hyacinth, jonquil and narcissus. Those electrified grew more rapidly, the leaves were larger, and the flowers opened sooner than those non-electrified. Bozo, of Wittemburg, in the same year, and the L'Abbe Menon of Angers, in the year succeeding, both confirmed the results of these experiments.

The same was attested in 1771, by Nuneberg, at Stuttgard.

Dr. Marat concluded from his experiments in 1782 (Recherches Physiques sur l'Electricite, Paris, 1782) that electricity exerts a powerful influence on the fertility of the soil.

L'Abbe Bertholen, who published the first book on electricity applied to vegetables, &c., affirms that flowers or plants just coming into blossom, when electrified, arrived sooner at perfection, and the colors were more brilliant than is ordinarily the case. Bozieres, in his experiments extending from 1786 to 1790, likewise confirmed the same results as above in cases of wheat, rye, beans, mustard and other vegetation. In the spring of 1843, great interest was aroused by the statement of a discovery by which atmospheric electricity was collected so as to increase vegetation extraordinarily. This originated with Dr. Forster of Elgin. (Agricultural Gazette, 1844-45) who after stretching wires in particular directions over a crop of barley, saw most luxuriant vegetation produced.

About the same time accounts of American experiments were circulated, showing that equally extraordinary effects were produced by feeble currents of voltaic electricity on vegetation.

In July, 1844, W. Ross made an interesting statement to the Farmer's Club of New York, which is freely detailed in the accompanying letter from the Hon. H. Meigs, Secy. of the Farmer's Club of the American Institute, to the Hon. J. Tallmage, the President of the Institute, and which I read for your further information :

AMERICAN INSTITUTE, April 26th, 1845.

Sir :—The theory of the influence of electricity on vegetation is by no means new; but the methods of applying it are a recent discovery. The familiar process which you observed in Paris a few years ago, of causing seeds of cress and some other plants to vegetate in a few hours—the establishment of poles in fields of grain, and grain with pointed wires, by which a perceptible difference of growth and difference of color were remarked, have caused experiments to be tried here. You may recollect that at a meeting of our Farmer's Club, on the 2d day of July, 1844, Mr. W. Ross, of Ravenswood, near this city, presented to the Club some potatoes, of which he gave the following account :

The potatoes measure seven inches in circumference. He planted the seed potatoes on the 5th of May last, using *leaves only* for manure. To

three rows of two hundred feet in length, he applied at one end a plate of copper, and at the other end one of zinc, and connected the two plates by a copper wire, supported on an adjoining fence, so that with the moist earth of the three rows the electric circuit was complete. All the potatoes of the field were planted at the same time, but those having no galvanic apparatus attached have small potatoes of the size of peas. I removed all the blossoms from all the potatoes, and the stems and leaves are much alike; so that this enormous difference in the tubers is due to galvanism.

Mr. Ross had succeeded also in a remarkable growth of cucumbers, producing cucumbers five inches long in thirty-seven days from the planting of the seed, by applying electricity three times from a common Leyden Jar.

This interesting experiment was published on the 2d of July, 1844, in the papers of the Institute, republished in the Mechanics' Magazine, in September, 1844, also in the report of Mr. Ellsworth (then Commissioner of the Patent Office) eighty thousand copies of which were published by Congress; and is again presented in the "London Quarterly Electrical Magazine," published in April, 1845; also, in the "London Year Book of Facts," and in many other publications, and is now in its progress in European publications, all giving credit to the American Institute. Since then experiments have been tried in small pots in this city, and the rapid growth of plants exhibited by similar galvanic processes.

It cannot yet be safely asserted that such a preternatural growth of plants will be of any great utility, but it excites curiosity, and will lead to full trials; and the influence of the fluid upon the growth of animals, as well as vegetables, will be tried.

This use of electricity was tried by the late Dr. Felix Pascalis, Chairman of the Silk Committee of the American Institute, as long ago as 1828. To promote the growth of silk worms, he experimented, and successfully applied it. These experiments of Dr. Pascalis were noticed by some of the most eminent chemists, and commented on by the scientific journals of France. We know that in northern climates, where the summer season is short, and where the Aurora-Borealis is almost a constant meteor, vegetation is almost double in rapidity of growth of that in temperate latitudes.

I trust that some of our intelligent members will this summer try the galvanic circuit upon all important vegetables, and that the fruit, grain, roots, etc., will be subjected to comparative analysis with those grown in the natural way, so that it may be decided whether any chemical difference exists between the two.

You may remember that Mr. Morse tried some of his first electro-telegraphic experiments under the auspices of the Institute. These wonderful experiments are now about to find their growth spread over the Union.

I am, truly yours,

H. MEIGS,

Secretary of the Farmers' Club of the American Institute.

Hon. J. TALLMADGE,

President of the American Institute.

After such positive effects on vegetable growth, in view of the fact of

the strong similarity between the functions of formative and nutritive life in the plant and in the animal, few would be prepared to doubt the probability of somewhat similar effects in the case of the latter. What these points are, it is hardly necessary here to enter into in detail. We are all aware that, like ourselves, plants live, feed, breathe, sleep, and enjoy the sun-light, and produce in kind. In them there are circulating, nutritive and exhalant organs, which are sensible to stimulation or depression, as are the organs of the human subject.

When the powers of the general system fail, or local organs are depressed, the physician employs stimulus to arouse and keep the vital functions in action, whilst he administers tonics and nourishing diet to support life; the farmer would, in case of his vegetation, apply Peruvian guano to arouse the digestive and assimilative organs, and likewise add the super-phosphate as a plant-feeder, whilst he would as sedulously put the surrounding soil in such condition of pulverization and cleanliness as would enable it to radiate heat, absorb moisture and afford as many surface points as possible for the generation of electricity.

Plants, we are also aware, are subject, as are human beings, to impairment of vigor or death, from what has been termed "Constitutional Shock." As I have witnessed loss of life in the human subject from shock to the constitution, following an ill-timed or improper surgical operation, so I have seen death occur in the tree from the shock caused by excessive pruning of its limbs.

Let us consider, then, what are actually the effects of electricity, galvanism, or electro-magnetism on the human system. I will not define electricity—most of our school-boys can do this. What its manifestations are, the farmer witnesses in his shattered oak, or the burned barn, after the storm has passed. The whole community bear testimony to its benefits in every message transmitted along the telegraphic wire. Only the Indian of the wilds, who is told by his returning brother that white men can speak to one another in a moment thousands of miles apart, remains skeptical to the end.

What I will say of electricity is, that it is a most potent instrument in the development and support of the tissues which compose the animal economy, and that it is an equally valuable agent in the restoration of the faculties and functions of the human system to a state of health, when they have been disarranged or disordered by external causes.

The brain itself resembles an electrical center. The light reflected or refracted from any object, and falling upon the retina or ultimate extension of the optic nerves, these nerves of the retina, like electric wires, immediately carry to the brain the information that I see what I suppose to be a book. The nerve-center—the brain—then issues the order along the nerve chords extending to the tips of the fingers, to touch what is supposed to be a book, and report back to the centre. The fingers are accordingly applied to the object, and immediately the answer is again returned to the brain: "you are right; the object has been touched; it is a book." Thus the general senses, through the medium of nerve-chords, acting like electric fibrils, all conspire to assist the brain in the formation of what is called its judgment.

Whilst many striking phenomena are common to both the nervous and electric fluids, the differences are as strikingly apparent. By means of the pneumato-chronograph it has been ascertained that the brain is one twenty-fifth of a second in recognizing an impression, and one twenty-eighth of a second in telegraphing that an impression has been received; that the velocity of light is 10,000,000 times, and electricity 15,000,000 times greater than that of the nervous fluid.

Electricity, both tonic and stimulant in its nature, acts in one of these capacities in the system, in developing latent constitutional force, as does fire upon a boiler producing steam, when water, the element from which steam is made, is there present. The machinery may be complete, the boiler sound - it contains water; still, the particles of the water must be put into active circulation, steam formed, applied, and continued to be generated, in order that the machinery may have its full play.

The manifest cause of many existing diseases consists in a want of power or tone in the assimilating organs to transform what is taken into the body into the various tissues. Here electricity exerts its tonic virtues. To sustain me in these views, I shall appeal directly to the volume before me, (*Med. and Surg. Electricity, by Drs. Beard and Rockwell, Fellows of the New York Academy of Medicine, pp. 141, 142, 146*); 9rst, however, in their own language, for those not familiar with medical terms, giving the practical definition of stimulants and tonics:

"Stimulants are usually understood to be those agents which quickly "excite the system, and temporarily arouse its activity. They are like the "goad which forces the beast to draw his burden, but does nothing to in- "crease his strength; or like the blast of the furnace, which increases the "heat but adds no fuel. Tonics, on the other hand, are ordinarily under- "stood to be those agents which gradually improve nutrition, restore en- "feebled function, invigorate the system, and permanently increase the "capacity for labor."

It is because electrization is capable of producing at once the effects which is ascribed to both these classes of agents, that we have defined it a stimulating tonic. It will be found on comparison that it is followed by the leading effects that are commonly attributed to quinine, strychnine, phosphorus, physical exercise, the shower-bath, and other familiar tonic remedies.

Like other tonic measures, general electrization causes the muscles to develop in size and hardness, and sometimes causes important rapid increase in the weight of the body, the result of improvement in nutrition.

"Increase of weight is familiarly observed after a trip of pleasure, a "vacation in the country, a voyage by sea and very frequently from the "use of cod liver oil and strychnine. General electrization sometimes "causes the patient to increase in weight from the very outset of the "treatment, and to an extent that is most surprising."

In the constant employment of this remedy upon the persons of others, the author refers to the increased development of the muscles of his own arms and those of his professional confrere, as matters of surprise to all.

"In cases where patients, either through curiosity or accident, have carefully weighed themselves just before taking a course of treatment, a most remarkable increase of weight has often been observed in course of even a few weeks. Whatever tends, directly or indirectly, to improve nutrition, must of necessity increase the capacity for intellectual and muscular toil. Accordingly, we find that patients who were so feeble that even a short walk or a ride was fatiguing, and who were signally deficient both in the will and capacity for exertion, soon begin to develop, under treatment, an activity and vigor that are sometimes surprising. They can walk farther and more vigorously and with greater enjoyment."

Where there is hebetude or torpor in the performance of the physical functions, giving rise to or accompanied with local congestions, here we may safely have resort to this most reliable remedy. Hence its application to a large variety of chronic diseases.

But, asks the ardent inquirer after truth, what special bearing has all this on the usefulness of the climate of Vineland? I answer by the enunciation of two facts. Firstly, that the diseases which are cured by some natural agency in Vineland, are exactly the same diseases for which electro-magnetism, as generated by the apparatus of the philosopher, enjoys reputation as a positive remedy—an indication of the natural inference that electricity must have something to do with these wonderful cures. Secondly, that the conditions of the climate of Vineland are remarkably favorable to the production of a liberal supply of free atmospheric electricity.

"Dr. Wilson Philip, of England, who began his researches on galvanism in the early part of this century, by transmitting its influence from the nape of the neck to the pit of the stomach, gave decided relief in every one out of twenty-two cases, of which four were in private practice and eighteen in the Worcester Infirmary."—[Noad's *Lectures on Electricity*.]

So far as my observation has extended—and I am satisfied of the similar experience of others—the relief afforded by the climate of Vineland in cases of asthma is really remarkable.

In paralysis, especially in the partial form, electricity and electro-magnetism, have, in my own experience, and that of, no doubt, every physician, been most successfully employed.

Only a few nights ago, a few crude remarks of my own elicited from a most eminent citizen of this place, and in the hearing of you all, the history of a case of partial paralysis accompanied with general debility and disorder of many functions of the body dependent thereon, where the relief afforded by the climate of Vineland, was, I may say, almost magical.

To the invalid, broken down in health by over-work of body and mind, a subject to general debility, emaciation, dyspepsia, torpor of the liver and the host of other concomitants of an overtired constitution, Vineland, in the experience of a host of now healthy and hearty citizens, can certainly afford ample evidence, even to the prejudiced, of the truly sanative virtues of her atmosphere.

In referring to the subject of atmospheric electricity, it is hardly necessary that I should, at this late day, attempt to demonstrate its iden-

ity with the electricity of the Leyden jar. Philosophy is agreed that the earth in its revolutions, the motion of its surrounding currents of water and atmosphere, and in the generation and formation and decay of the vegetable and animal life by which it is inhabited, is in itself but one vast electrical machine.

Some idea of the general effect which this atmosphere exerts on the conditions of health and disease may be inferred from a few remarkable facts. Philosophy has observed that during the prevalence of epidemic cholera, the ordinary or average electrical status of the atmosphere was strikingly disturbed; and that, on application to the body of the patient, the electroscope failed to elicit the usual phenomena. Medicines, then, were of no avail. As, however, the natural electrical equilibrium began to be restored and the body of the patient became electrically charged, so there was a corresponding abatement in the epidemic, independent of the remedies employed.

Ahrens and Plaff, in their investigations of 1812, stated that the electricity of the body disappeared during the attacks of rheumatism, and re-appeared on recovery. The following information on this point is elicited from the work of Drs. Beard and Rockwell, already referred to:

"The animal system in health, as well as in disease, would seem to be variously influenced by the conditions and variations of *Atmospheric Electricity*. The facts and experiments on this point have heretofore been so meagre and unsatisfactory, that scientific men have very naturally held their opinion in suspense concerning it: but sufficient evidence is now collected to make it at least probable that the constitution, especially of the nervous and sensitive, is very appreciably and traceably influenced by the variations in the quantity and quality of the *free electricity* in the surrounding air."

In the first place, there would appear to be a correspondence between the sensation and health of nervous and sensitive constitutions and the established regular or irregular variations in the quantity of atmospheric electricity. It has been shown that there are two daily tides of positive atmospheric electricity—the tides between 9 and 12 a. m. and between 6 and 9 p. m.; the low tides between 2 and 5 p. m. and 1 and 5 a. m. (Dr. Wislizenus in Transactions of St. Louis Academy of Medicine. Ferguson's Electricity, p. 100).

The annual variations are fully as marked as the diurnal; the quantity of positive atmospheric electricity being greatest in winter, least in the summer, gradually increasing in the fall, and as gradually decreasing in the spring, bearing a pretty constant relation to the temperature. Now, it is a matter of common observation that impressible, nervous organizations—except the tuberculous—are usually stronger and healthier in the winter than in the summer, are invigorated by the advancing coolness of autumn, and enervated by the increasing mildness of spring. Impressible organizations also observe that they can work better with the brain in the morning than in the afternoon, and that, next to the morning, the early evening is the most congenial to study. Those correspondences would seem not to be wholly fanciful, nor fully explicable on other grounds, though

their exact relation to conditions of atmospheric electricity may never be precisely demonstrated.

The correspondence between the irregular variations in atmospheric electricity and the sensations involved in nervous organizations, seem to rest on more definite evidence. Dr. Wislizenus found that "in 2,124 observations made at the regular hours, the atmospheric electricity was 2,046 times positive, and only 78 times negative." From these and other data given by him, it seems that the chief cause of negative atmospheric electricity is storm, and especially thunder-storms, and that at all other times positive atmospheric electricity prevails. In very many cases, this change to negative electricity takes place shortly before the storm approaches;—during its progress there may be, especially in thunder, rapidly repeated alternations of positive and negative conditions, followed by an equilibrium, or by positive electricity. Now, it is a well recognized fact that many individuals, just before storms, suffer exacerbations of rheumatic or neuralgic pains. Just before and during storms, corns, bunions and old ulcers often become painful. Nervous patients, not unfrequently, are so unpleasantly affected in their general sensations by the approach of a storm, that they can be depended on with considerable certainty as prophets of the weather. That the human system does become charged with atmospheric electricity to the same extent and in the same manner as it does by machine electricity, is beyond cavil. Authentic cases are recorded where the living human body has given sparks and shocks like a Leyden jar.

If such, then, be the conditions necessary to the liberal production of atmospheric electricity, these conditions must, as confirmed by the experience of every resident of Vineland, professional or otherwise, be eminently in operation here.

The rapidity with which moisture disappears from the surface may be illustrated by a fact well known to the majority of my hearers, that the day following the heaviest of rains, and often, indeed, only several hours after, the ploughman may be seen at his duty in the fields.

With regard to matters of pleasure, and in many other respects, the winds may seem sometimes an annoyance. It is a quaint and equally true adage that "It is an evil wind that blows nobody any good." Vinelanders may be poor in purse, but are certainly rich in the possession of a wind that blows good health to everybody. Wafted from the moderate temperature of the Gulf Stream, and laden, as we all feel and know it is, it enters alike the hall of the rich man and the cottage of the poor; ever in motion, none are permitted to inhale the same atmosphere a second time. A fresh supply of oxygen is afforded at every breath. The person of the invalid is ever surrounded by a gratuitous and healthful supply of positive electricity. Lapping up the surface water, which, if allowed to lie stagnant and exposed to the heat of the sun, would, by assisting the decomposition of vegetable matter, generate putridity, develop malaria, and give rise to every variety of ugly throat disease, away it hurries in the good mission to which Providence has assigned it, only to give place to later currents equally as beneficial.

But how, we may ask, is general electrization accomplished in its application to the human system, so far as philosophical apparatus is con-

cerned? The object proposed, says Prof. Beard, in general electrization, is to bring every portion of the body under the influence of the electric current, so far as is possible, by *external applications*. This is best accomplished by placing one pole, usually the *negative*, at the *feet*, or the *coccyx*, while the other (*positive*) is applied *all over the surface of the body*. He further remarks :

“ The influence of any drug or remedial agent on the constitution can “ only be ascertained by bringing the whole system under that influence. “ A man who habitually washes one of his fingers in cold water, appreciates the tonic effects of the cold only in that finger; but a man who habitually takes a shower-bath or plunges into a tub of cold water, realizes powerful tonic effects on his entire system. If one hand or one foot is vigorously and regularly exercised, the muscles of that limb exhibit the tonic effects of the exercise, and increase in hardness and perhaps in size; but, if all the portions of the body are vigorously and regularly exercised, all the muscles will increase in firmness and perhaps in size, and tonic effects will be appreciated by the entire system. Just so with all other tonic remedies and influences. *Electrization is no exception to this law.* In order to ascertain its full effects on the system at large, and to determine its position among remedies, the applications must be made in such a way that the whole system shall, so far as possible, be brought under its influence.”

If this be the most scientific and approved method of applying this remedy in *Art*, such method is certainly in consonance with that employed by *Nature* herself in the Vineland climate.

If, as philosophy tells us, the friction of the winds with the earth's surface produce in the earth a negative condition, whilst the atmosphere is positively charged, the citizen of Vineland, as he treads the soil of the township, receives the negative current at the feet, whilst in similar accordance with the requirements of science, the positive current becomes applied to the whole body-surface.

Some may deny this assertion, on the ground of the apparent necessity of the body-current being applied to the denuded person. In reply, I ask, how was the electrization accomplished, in the cases already referred to as electrified by nature to such an extent as to give a spark?

No. 4.

— BY E. S. LANSING, M. D.

It undoubtedly appears to the uninitiated and the uneducated, a very easy matter for a well educated physician to pronounce definitely the climate calculated to benefit a given disease.

In taking that position, the world would pay a higher tribute to the accomplishments and scientific attainments of the profession than it deserves. It is an easy matter to say that such a climate, characterized by a certain range of the thermometer and barometer, or specified hygrometric condition, an electrical action (not too great or too little), a prescribed amount of ozone and anti-ozone, and a thousand minor conditions, is calculated to act as an auxiliary in establishing health in a patient suffering with different diseases.

Did it ever occur to a person indulging in such complimentary regard for the profession, that there might be a difficulty in finding the exact combination of which he can pronounce emphatically as being calculated to be of great benefit to a patient?

Climate is, by the public, appreciated in so general a way, that it is eminently proper to say at this juncture, in a hygienic sense, that climate is quite a complex affair. It should be defined as a locality or region of the terrestrial globe having distinct features of seasons; of a certain annual range of atmospheric heat; of approximate daily range of thermometer, corresponding year with year; of recognized humidity; of electrical condition; of ozones and anti-ozones; of evaporation; of currents of air; of quality of water; of quality of soil (both sub and surface soil); and all the circumstances belonging to each geographical region calculated to exert influence on living beings.

A distinct climate does characterize adjacent lying regions of quite small dimensions territorially; for instance, the Piedmont regions of Europe and of America as compared with mountainous regions:—elevation of the one making the marked difference which consists more especially or markedly in the thermometrical range. With this difference in heat,

there necessarily follows a change in those elements which go to make up climate.

We need not go to regions lying at different altitudes, but take two localities on the same, or nearly the same plane, and we find a very marked difference in the climatic influences. Unquestionably the operation of local causes effects the difference. Until these local causes are fully recognized, and their agency in continuing or curing diseases, or effecting changes in the delicate operations of the animal economy, it will be a very difficult thing for the physician to pronounce the exact climate best suited to the patient's condition. Science has yet to penetrate deeper into the mysteries of nature and determine with that nicely of precision which is her glory and pride, the existence and qualities of these subtle influences and their operations, before the profession can do more than in a general way recommend certain localities for their climatic influences.

The profession is rapidly advancing in the right direction. Observations, experience and statistics are all being solicited to furnish their respective quotas to the attainment of the great end so much desired.

The system of observations carried on by the government through the Smithsonian Institute is doing much to hasten on the time when we shall be able to state with certainty the exact conditions to be found in a very great majority of the localities where observations are made.

From my definition of climate, it very naturally suggests itself that the proper classification of observations should be:

1. *Thermometrical range.*
2. *Hygrometric condition and dew point.*
3. *Electral condition or tension.*
4. *Pressure of the atmosphere.*
5. *Rapidity of evaporation.*
6. *The presence of ozone and ant-ozone*
7. *Currents of air.*
8. *Topography of the locality.*
9. *Soil.*
10. *Moral condition of the inhabitants.*
11. *Occupation of the inhabitants.*

This is a wide range, but not too great a latitude. The treasure that will be garnered from so great a field of inquiry will richly repay the laborer. I shall not attempt to address myself to the consideration of all these points, as we have no data upon which to found definite deductions, and upon most of them my remarks will be simply the result of observations during a four years' residence in this place. I shall consider some of them simply as elements in a compound agency:—bear in mind that they never act alone. The points that I take up I propose to notice in a general way, as well as in their local bearings.

1. *Temperature.*—For the purpose of ease, and not to appear technical, I shall use the terms heat and cold; signifying the negation by a positive term. The effect of temperature on the human family has been recognized by scientists, and has been given a prominence in the catalogue of causes, operative to develop or depress the physical and mental energies, that places it among the first and most potent of all. The amount of evi-

dence has accumulated to such a degree that simply referring to some is all I shall attempt to do. The physical peculiarities of nations of different countries, and the diseases to which they are most liable; the types of these diseases: the effect on strangers visiting these countries—each testify of the effect of temperature. In the dark races—natives of the tropics—the organization of the skin exhibits a special provision to meet the requirements of the climate.

The nervous and vascular systems are excited to increased activity under a high temperature. The functions of the skin and intestinal mucous membrane are especially excited, and the lungs have less labor to perform. In the white races—not physically organized to meet a long-continued high temperature—the liver is stimulated to perform great labor, and to secrete an increased quantity of bile, and is also changed in quality: a fact so patent that a long residence in a hot country is looked upon as inseparably connected with sallow skin, yellow eyes and other symptoms of organic disease of the liver. Whence the apothegm: “A ten years’ residence in India—wealth and a diseased liver the result.”

By reference to Dr. Ingram’s meteorological record, it will be observed that our high temperature does not continue long, as the column of means for the year 1870, (which, by the way, was an unusually hot summer in this locality), shows one month with a mean temperature of 85° Fahrenheit, and that was July; June and August having a range of 76° , or summer heat.

From these facts, and from observations during nearly a five years’ residence, I think we can confidently state that there is no place more exempt from liver disease or “biliousness.” The fear that bilious difficulties might become aggravated has been an objection raised to this place; whereas, experience and observation show that many invalids who have come here to recover from the effects of fever and ague, having liver diseases, have been radically cured by the change. There are many cases of dyspepsia, associated with a greater or less amount of liver disturbance, that would be radically cured by removal to our climate.

The action of severe cold on the animal economy is directly sedative. The tissues, or capillary vessels, are contracted and the blood driven from the surface to the internal organs, accompanied with stupor and insensibility. Its influence, long-continued and associated with the absence of solar light, dwarfs the growth and stunts the minds of the inhabitants of the Arctic regions. Their diseases have peculiar characteristics, assuming the asthenic form. Epidemics or infectious diseases work most appalling results when introduced among them. More moderate cold, such as exists in the northern and central portions of the temperate zone, acts as a gentle stimulant, and is evinced in the robust health and vigorous intellects of the inhabitants.

In these climates, we have another set of organs that are most active. The lungs and the kidneys are called into the greatest use, and far exceed the activity of the liver and the skin. Disorders of the chest are among the most common and most formidable of the diseases observed. This fact suggests the necessity of discovering, if possible, the cause, so that proper advice may be given the invalid, when desired.

How does cold operate? Does cold operate directly on the lungs and air passages in producing disease of those organs? Or, is its effect produced indirectly through the skin and nervous system?

The quantity of oxygen in a given amount of air must be different, according as the density is greater or less. The greater the density, the greater the amount of oxygen. For instance:—A dry air at 32° , and under a pressure of 30 inches, will contain more oxygen than the same amount at 75° under the same pressure. What effect will this have upon the lungs? Will a greater proportion of oxygen be brought in contact with the lungs, as the pressure is increased and the temperature reduced? Does a person inhale as large a volume at 32° , as he does at 75° ? What is the effect of the expansion of cold air on the air cells, assuming that not enough air is taken in at one inspiration to permeate all the air cells; but that the cold air is diffused in accord with the law governing the diffusion of gases—the colder the air, the greater the difference between the two, and the more rapidly it is diffused through the lungs, the more rapidly heat is abstracted to raise it to the temperature of the lungs: the greater the demand upon the system: and, in enfeebled organizations, it becomes an important point to conserve the animal heat?

What agency has the hygrometric condition of the atmosphere in modifying the evident violent contact of cold air in the air cells, even diffused, as we assume it to be?

Are respirations more frequent in cold weather than in warm, to compensate for the loss of caloric? Or does the hygrometric condition of the atmosphere compensate for the deficiency?

I recognize the fact that lung difficulties are unfrequent here. Consumption I have only seen as imported. Pneumonia we occasionally see, but of so mild a type that at the North it would hardly be worthy so formidable a name.

Throat diseases and catarrhs are vastly benefitted by our climate: and, in my own family, I have evidence of its potency in radically curing a very severe catarrh.

In the numerous cases that have come here for the benefit of their health, that I am cognizant of, I do not recall a single case of catarrh or asthma that has not been greatly benefitted, if not radically cured.

By reference to Dr. Ingram's "Table of Relative Humidity, &c.," we find that Vineland stood 87 and Jacksonville, Florida, stands 88 in the scale. Jacksonville has long been considered a favorite spot to which consumptives have resorted year after year, and I know with very good effects. At Jacksonville, the hygrometric condition of the atmosphere is nearly the same as ours.

Again, our climate gives very nearly the same daily range of the thermometer, though the mean temperature is lower here during the winter than that of Jacksonville, but not so low as to be exhaustiv: but, to the contrary, greatly stimulating. And as the invalid feels acutely the great daily ranges of temperatures, I submit, thermometrically, hygrometrically, and from experience, that we can reasonably claim that we have a climate offering finer inducements to the sufferer from tubercular disease.

Again, this matter of humidity plays a very important part in our daily comfort. Imagine the daily currents of air that now refresh us, (and are undoubtedly largely instrumental in promoting health, to be referred to hereafter) entirely deprived of moisture. Their desiccating influences on the pulmonary membranes, and on the skin also, would be very great. Being far removed from the point of saturation, they would have the power to absorb moisture from our bodies that would literally mummify us.

We question the healthfulness of the dry atmosphere proper. In it the skin becomes dry, husky and parched, as indicated by its shrunken, withered and harsh look, and to the subjects of lung disease it is most distressing, causing a soreness or rawness in the chest and a harrassing, irritable cough.

The electrical tensions of our atmosphere, I believe, have not been observed critically; at least, in Dr. Ingram's paper, I find no statistics upon the subject. I hope the Doctor will correct this omission, and favor the Club at some early day with the result of his observations.

Of course, it is recognized that no chemical action takes place—no motion of any kind. The chemico-vital action of plants in their growth, in their decay, the stirring of each twig, the falling of each leaf, the constant changes going on in the vegetable kingdom, the movement of currents of air, our prevailing southwest winds—all are accompanied to a greater or less extent with the development of electricity.

May we not recognize the fact that we have an almost constant wind, attribute the high sanitary condition of our climate to the fact that the electrical tension is such as is most closely allied with the healthy performance of the functions of life? It unquestionably is just adapted to health. But what is that condition? Let us hope the Doctor will observe his electrometer as closely as he has the barometer and thermometer.

The most remarkable cures that I have observed, resulting from our climate, are those of the nervous system. They are the diseases the profession have long felt more to be treated by the agency of electricity, and, in the use of which, an immense amount of ingenuity and talent has been exercised, and is still being used on neuralgia, nervous debility, nervous irregularities or congestions, and the long list of nervous troubles incident to city life and the overtasking of the nervous system. Business men, broken down by the strain of business life, will here find a climate and occupation that is reasonably certain to result in entire restoration to health. It is only fair to claim that the electrical condition of this climate is largely conducive to the marked impression made on the character of sufferers.

As an element of climatology, the rapidity of evaporation must enter very largely; but, as our statistics are only meagre on the subject, we can only claim, whatever it may be with us, it certainly cannot be incompatible with a high degree of health—therefore, it is proper to assume that it is just right.

In our previous meetings, the Club has on sundry occasions been deeply interested in the subject of ozones, which is largely occupying the attention of scientists, in its effect upon the human system, especially as an agency in catarrhal epidemics, and also in cholera. The observations made up to this time are so limited that we cannot form a fair judgment;

and so shall be obliged to await more extended observations before being able to place our position in a scale.

The influence of currents of air enters very largely into the complex conditions known as climate. As the currents in the ocean keep it pure by preventing stagnation and putrefaction, so the currents of the atmosphere keep it pure. Imagine the condition of the air in the immediate vicinity of one of our large cities, with constant exhalations from putrescent gutters, the thousands of fires, and the dissemination of impalpable powder from pavements trampled by horses and men, and with no currents of air to relieve local accumulation. It would soon become insufferable. We are especially blessed with winds—not formidable gales; but, in summer, pleasant and cooling, and earnestly looked for as the hour approaches when we can expect them to rise. In the winter, they are not of that terribly piercing character that at the North cause man and beast to seek shelter.

Another consideration in this connection: What effect have these winds upon the electrical condition of our climate? At some future meeting, it is to be hoped, we shall have a full record, extending over a reasonable time, indicating our electrical condition, the rapidity of change from positive to negative, the relative amount, and with it data bearing upon the health and diseases of the locality.

The topography of Vineland Dr. Ingram has stated in his paper. I concur in his deductions from it.

The character of the soil has a great influence upon the climate of a locality. I can refer you to sections of our State, and also of Delaware, as elevated above tide-water as we are, that are suffering from that terrible disease, fever and ague—(our exemption from which has already been alluded to by Dr. Bidwell). After carefully examining a number of districts thus afflicted, I could arrive at only one solution of the cause, and that is *the character of the soil*, permitting the growth of the fever and ague cryptogama.

We are heartily sneered at by those who have never visited us, as living on Jersey sand. We can endure their gibes, as we can demonstrate our ability to raise as fine crops of corn, clover and wheat as any other section of the country, and, at the same time, not being rendered incapable of enjoying them by chills and fever.

The moral condition of our settlement is of such high character that it has become a landmark to all efforts of reform. We can congratulate ourselves that “our lines have fallen in pleasant places.”

NO. 5.

By E. C. BIDWELL, M. D.

To the observations of our learned brother on the hygrometrical and other climatic conditions of Vineland, in their scientific aspects, I have nothing to add. I can speak to a point or two of immediate practical bearing, with some assurance. I can confirm fully all that Dr. Ingram has said in regard to the freedom from malaria which we enjoy here. And this seems to me a point of sufficient importance to justify us in dwelling upon it with emphasis as well as satisfaction.

Coming here as I did from a long residence in the West and South, where intermittent fever and its cognate products of malaria, are *par excellence* the diseases with which, therefore, I had become long and painfully familiar, the first great impression made upon my mind in regard to the sanitary condition of this place was its entire exemption from that epidemic scourge of a large portion of our land. This impression was very gratifying, and has been confirmed and deepened by the observation and experience of five years' residence here.

Because the intermittent fever is not very often directly fatal, people are somewhat in the habit of speaking rather contemptuously of it. But, when we consider the constant wear of a steady poisoning, slowly and surely sapping the foundations of life, and the numerous brood of diseases, acute and chronic, besides simple intermittent, to which malaria gives origin—some of them of a formidable character, such as the more malignant forms of fever, rheumatism, neuralgia, dropsy, etc.,—it certainly cannot be regarded as a trifling matter. Nor is exemption from it a trifling point.

This place and this immediate region occupy a position almost unique in this respect. You may start here and go west on our parallel (39), or follow our isothermal line, which dips downward to a lower latitude in the interior, and you will not get out of this State before you get into a malarious district. Thence from Delaware Bay to the great plains of our western desert, you will scarcely find a spot of even limited extent where malaria does not exist. Our position is, therefore, an enviable one. It offers

what few other places, if any, this side of the Rocky Mountains, can offer, a refuge for invalids both from the North and South. The New-Englander, compelled to seek a warmer climate than his own, but justly fearing the malaria of lower latitudes, may dismiss his fears and dwell here in security. The southern or western invalid, broken down by exposure to malarious influences, and its train of ills, but dreading the rigor of northern winters, may here find escape from both.

Of the cause of this exemption, I have little to say. From the absence of a disease, we may infer the absence of the specific cause. Dr. Salisbury seems to have demonstrated the specific cause of intermittent fever—or, in other words, the essential element of malaria—to be a cryptogam, which he described and named *Gemmasma*. I am not prepared to say positively what of our climatic or terrene conditions are unfavorable to the growth of the *Gemmasma*, or what element is lacking which it requires. Perhaps the fact that our soil is so absorbent, and no water can stand until it becomes stagnant or to maintain a constant moist surface, is sufficient to account for the absence of this variety of vegetation.

It is true that we have some marshes of considerable extent on the Vineland tract; but the phænogamous vegetation of our marshes is totally unlike that of malarious regions. It seems reasonable to suppose, in the absence of further observations than I am acquainted with, that the cryptogams differ also under the difference of conditions. At all events, I have never found cedar swamps malarious. It might occur, as a possible fact, that the great amount of water prevailing in our native cedar swamps, even in dry seasons, should account for the absence of *Gemmasma*, and that a condition of partial drainage and partial cultivation, which some of them were destined to pass through, might be expected to develop it in our swamps, as those conditions do in swamps elsewhere. But already too much of our swamp-land has passed through, or is now in that stage of its improvement, without any such result, to permit us any longer to entertain any such apprehensions. Not even in their half-dried or half-cultivated condition, nor in any degree of moisture, have our marshes developed any malaria.

We may confidently assert that our entire tract is exempt from that prolific source of disease.

The Climate of Vineland.

By L. W. BROWN, M. D.

[Not read before the Sydenham Medical Association]

Having been engaged in the practice of medicine for the past seven years in Vineland, and previous to my locating in this place having had advantages of noticing the influence of climate on diseases in the Eastern and Western States, as compared with that of Vineland: and having observed such marked and permanent curative influence of the atmosphere and water in this region upon some diseases, which is so marked and gratifying that it is fast becoming a popular resort for those persons who are in want of a change of climate for their health, and knowing that learned medical men are advising invalids to come to this section of the country for the alterative action on their systems, I, of course, fully advocate the Vineland climate for health.

We are free from miasma. I have not known of a single case of fever and ague to originate in this locality. The water is soft and clear. Dyspeptics frequently remark that they can partake freely of the water here without causing distress in their stomachs; so different is it from the hard water in some sections of the country. It has also a palliative and curative influence on some diseases of the kidneys.

The following diseases are among those on which this climate has a marked curative action:

Bronchitis, Laryngitis, Hoarseness, Heart Disease and Asthma.

Asthma is particularly favored. Many asthmatics come to Vineland, who are entirely relieved: and many other cases are very materially benefitted by the change of climate, and careful medical attention.

Epidemics of acute disease are not so prevalent here as they are in the Northern climate, for the reason that this climate is more mild and not so changeable.

Our winters are short in duration, and not as cold as in the Northern

States, which adds to the farmers' convenience, as they are enabled to till the soil during the winter season for spring crops, etc. The summer days are cooled off by the invigorating sea-breezes that fan us so gently during the warm season. The night breeze is refreshing, which adds so much to the comforts of sleep, especially to those who are tired and weary from a hard day's toil, which is conducive to health. It invigorates invalids who are suffering from debility, etc.

There are many persons living in the Northern climate whose peculiar organizations are not adapted to those regions. It may be too cold or too warm or too suddenly changeable in its temperature.

This climate is peculiarly adapted to those persons who are debilitated from undue mental application. For such persons, a change of climate, scenery, habits and thoughts will prove beneficial.

I do not construe the idea that all diseases are cured or benefitted by the climate here, for some diseases are not curable in any climate. I do not extol the influence of this climate too highly, as I have only attempted to lay before you some few of its many characteristic peculiarities and advantages.

Vineland Cures.

[Not read before the Sydenham Medical Association.]

BY E. R. TULLER, M. D.

Dr. Tuller read before the Vineland Farmers' Club the following statement of cases that have been cured by the climate of Vineland, assisted, of course, by medical treatment :

Case First ; August 20, 1866. Miss M—— B—— ; aged 23. Had suffered from complete loss of voice for eleven years ; could not even whisper. She was obliged to write her answers to questions, and had not been able to communicate her ideas in any other way during the entire period mentioned. Her symptoms were as follows :—Emaciated ; pulse feeble, quick and small ; complexion pale and sallow ; disposition irritable, often depressed and discouraged ; loss of appetite : sensation of restriction in region of larynx ; wakeful at night ; menses irregular every four to six months. February 12, 1867, she began to whisper. Before the close of the year she was discharged from medical treatment completely restored to health in all respects, and has remained well up to the present time.

Case Second ; March 6, 1867.—O—— —— ; aged 68. Of a melancholy temperament ; had suffered from chronic constipation for a number of years ; no natural passage for seven years ; had often waited three weeks on the action of nature, but was obliged to resort to artificial means to obtain relief. Gave him three powders, one to be taken that night, one the next, and the third the following night, if he got no relief. On the second morning he had a natural, healthy motion, and did not take the third powder. On the twenty-eighth of the following September, he came to my office to inform me that he had not suffered a day since, and still had the third powder.

Case Third ; December 31, 1868.—Deacon A—— ; aged 55. Of dry, meagre temperament ; had suffered from chronic constipation and dyspepsia for fifteen years ; had been obliged to take large doses of cathartics.

medicine two or three times every week: he was otherwise in good health. He had been troubled with tetter in former years. He had a natural motion on the eighth of January, 1869; and was discharged cured on the eleventh of February.

Case Fourth: Mrs. C — M — : aged 24. Delicate in form: of serofulous habit; light hair, blue eyes and clear complexion: had lived most of her life in Western New York: her father and most of her family had died of pulmonary consumption; she had suffered from female weakness for five years: was confined to her bed a large part of the time: and was wholly unable to go up or down stairs without assistance. During this time she had received the very best medical treatment that the city of Rochester afforded, but without any material benefit. August 24, 1867, she came to my office for treatment. Her symptoms were as follows:— Pulse 90: pain in right side of chest and under both shoulder-blades: dry cough: pressure in the pit of the stomach, after eating, as if she would suffocate: headache most of the time, chiefly in front part, often in base of brain: appetite poor: burning in stomach: great desire for salt: diarrhea every other day, attended with pain in middle of bowels: piles: tumors protruded, with some bleeding: burning in lower part of abdomen: bearing-down pains: constant weight and pressure in region of uterus: constant urging with scanty discharge of urine: pain in urethra after micturition. The first three months of treatment this patient was carried in and out of my office. Her improvement was gradual: and, after eight months, her health was as good as it had ever been, and she was discharged from further treatment, fully able to enjoy the blessings of life.

Case Fifth: March 14, 1868.—Miss B — : aged 20. Of nervous, biliary temperament, and of serofulous habit: had had sore eyes, more or less, from infancy, and always aggravated from colds and by changes of the weather: the disease attacked first the right eye, and, when six years of age, the left one; they were often so bad that she could not use them for two months at a time; she had tried the most celebrated oculists in the country, and used all means that gave promise of relief; had spent several weeks in an eye infirmary in Boston: but all without the least benefit. When she called at my office, her symptoms were as follows:—Both eyes slightly inflamed, the left one most: small ulcers on cornea of left eye, the largest one in the outer angle near the pupil: vision obstructed in both eyes, most in the left one: redness of the conjunctiva of left eye: smarting: could not bear the light: symptoms most troublesome in the afternoon; menses irregular every four to twelve months; during the winter season the inflammation disappeared, but came on with the return of the spring. June 12; patient discharged cured, and has remained well ever since.

Case Sixth: October 13, 1867.—Mrs. H — : aged 33. Of serofulous habit; dark hair, dark skin and black eyes; generally healthy, but had been a great sufferer from prolapsus of the uterus; she had been obliged to wear mechanical support for years, in order to attend to her family duties; in fact, so severe was this case, that if the mechanical support was removed, the uterus protruded. I gave her one dose of medicine, and directed her to remove all mechanical support and let nature have free

action. She had considerable inconvenience for two or three weeks from the absence of the mechanical support to which she had been so long accustomed: but, after that her recovery was complete and restoration perfect; and she was discharged from treatment the twelfth of the following December.

These cases will serve to illustrate the ease with which the human system reacts from the consequences of disease, under favorable circumstances.

Nearly all chronic diseases may be cured in this climate. The recuperative powers of nature are called into active operation here more readily than in any other district with which I am acquainted.

The pure water, the absorbent soil, the absence of all miasmatic influences, an atmosphere in constant motion—all combine to fill up the measure of a healthy and invigorating climate.

It is more particularly adapted to those persons who are suffering from dyspepsia, liver complaint, constipation, chronic diarrhea, dropsy; asthma, bronchitis, diseases of the throat, rheumatism, and troubles of the heart which have originated in rheumatism.

There is no climate more favorable for the cure of throat troubles than this. Cases of serious sore throat are very rarely met with, even in scarlet fever: none that fail to yield promptly to medical management.

The climate affects different persons differently. Recovery commences immediately with some: while others must go through the process of acclimation.

In most cases the cure is permanent with both classes.

Nos. 6 and 7.

By CHARLES BREWER, M. D.

NECESSITY OF THE PRODUCTIONS OF THE SEA AS WELL AS OF THE LAND TO INSURE THE HEALTH- FULNESS OF ANIMAL LIFE.

In classifying the family of creation in certain generic and arbitrary divisions, dependent upon the specific character of their food, viz: the carnivorous, frugivorous, graminivorous herbivorous, insectivorous, etc., man, from the peculiar construction of his organs of mastication, deglutition and digestion, has been called omnivorous. As regards occupation or direction of life, he might also be called amphibious, living both upon the sea and the land, and nourished alike by the productions of both.

The peculiar structure and arrangement of the organs referred to, indicate not only the admissibility of, but the necessity for the use of a certain varied character of food. In support of this assertion, experience has shown that in those countries in which mankind are accustomed to be omnivorous, viz:—to unite a varied animal and vegetable diet, are those most distinguished in their inhabitants for superior mental and corporeal endowments.

The peculiar and constant diet of the Arctic regions as well as that of the lower tribes of the African and American Deserts, no doubt manifests itself as strikingly in the character and degree of their mental calibre, as in that of their physical development.

In arriving at some fixed conclusion as to the character of diet best suited to preserve the faculties of man in a perfect hygienic condition, it would moreover appear most philosophical to investigate carefully the composition of the several classes of organic structures of which his body consists, viz:—the muscular, nervous, circulatory, osseus, fibrous, ganglionic, etc., each of which requires especial elementary support.

Experience must here, as elsewhere, be accepted as the judicial tribune of scientific and theoretic assertion; and here, fortunately, science and experience go harmoniously hand in hand, the experiments of the one being sustained by the observations of the other.

In the present age of advancement, where progress is ever the password, mind continues to assert, as vigorously as ever, its superiority over matter. The intimate connections, co-relations and dependencies of the two are even yet imperfectly defined. Neither the chemical analysis of the brain and nervous system, nor microscopic inquiry into its intimate structure have thrown satisfactory light upon the wonderful function executed by that more elevated part of the economy denominated mind. This brilliant phosphorescence of a rarified or more refined form of matter being, however, intimately associated with the materialism of brain and nerve, the support and healthful condition of these allied organizations becomes a matter of earnest solicitude.

In an analysis of the interior composition of brain and nerve tissue, we find that in addition to the necessity for other principles, a peculiar one—phosphorus (in combination with the earthy basis) forms a most important and absolutely essential part. Hence the question: Where and by what means is an adequate supply of this principle, so freely consumed in mental as well as procreative force, to be supplied?

The discovery of prophylactic, curative or nutritive principles does not of itself predicate, when adopted, an amelioration or condition. To secure this, must follow the selection of some form of administration, in which these principles are promptly acted upon by the assimilating organs and readily transformed into body tissues.

Therapeutics, announcing the *rationale* of action and great value of phosphorus as a stimulator and supporter of brain and nerve force, in presenting the many new and important preparations of this agent adopted as remedies, still further refers us to Dietetics as affording the material required in form far more acceptable to the palate and more readily appropriated by the assimilating functions.

In according to the fleshy or animal productions of the land the larger power and support to the muscle and sinew of man, science and experience combine in recommending a prescription with which a physician might please even an epicure, viz:—the liberal dietetic use of the productions of the water—the fish, the oyster, the lobster, the crab, etc.,—as elementary support to the osseous system, and still more necessary to the formation and preservation of a healthy and nerve force, or its restoration when broken down by dissipation or disease.

As the skillful artisan, accustomed to employ special tools or machinery for the perfection of certain work, in their absence can make available such as are at hand, so the accomplished physician in case of the necessary deprivation of those agents provided by nature for the sustenance of the human frame, is compelled to supply their deficiency as manifested in the failing powers of life, by those inventions of his art most nearly according with the material composition required.

Science, it is gratifying to learn, is now largely directing her efforts to a more judicious equalization of the productions of the land and water, by the farming of fish in our larger rivers and inland lakes. Observation and common-sense here suggest, that due attention to the wants of nature by a well-regulated supply of food-material calculated to nourish and strengthen the nervous system would be far more efficacious in the *prevention* of the

now far-spread nervous maladies, than is the science of medicine in their *alleviation and cure*.

In conclusion, it may be safely assumed, *ceteris paribus*, that those climates or local situations in which are found of ready access all the varieties of products required for the sustenance of the human frame, possess the highest advantages over others which do not, for maintaining the mental and physical powers of man in a state of perfect health.

HEALTHFULNESS OF FRUITS.

Among the various agents whose combined influences conspire to preserve the organs of the animal economy and their functions, in a moral condition, few play a more important part than the succulent juices of the many and luscious varieties of fruits, which, from the tropics to the higher northern latitudes, present themselves in profusion to the senses, as the most beautiful and salubrious of the many free gifts man has received from the hands of a benevolent Creator.

Of the perfect healthfulness of fruits, when freshly preserved from the parent tree, there can possibly be but one opinion. The liberal hand with which they have been provided by nature to supply the wants of man is in itself presumptive evidence of the fact announced. The host of evils invading the human system, and consequent upon a deprivation of their wholesome influence, offer themselves as no less authoritative witnesses.

To accept the advances of disease, or to succumb to its encroachments, the constitution of man must offer some weak point which is open to occupation.

Some *nidus* must be found in which the germs of disease may be deposited.

No more favorable *point-d'appui* could be desired than an impure or impoverished condition of the blood. Composed as this fluid is of fixed elements and in definite proportions, little deviation from this healthful equalization is allowed without some open manifestation in the form of a malady.

To preserve these harmonious proportions, both the saccharine and acidulous elements of fruits are an indispensable and a constant necessity. The mariner upon a long voyage, who finds himself the victim of that baneful sea scourge, the scurvy, fully appreciates as a necessity what he once

recognized as a luxury. It is then practically demonstrated that the juice of the orange or the lime, in the prompt relief it affords the system, is of far greater value than all the medicines the healing art can supply. The condition of the blood, which gives rise to scurvy and a host of other eruptive diseases of a most annoying character, is not confined to a life on the sea, but is equally apparent in those walks of life where confinement in impure air, and a deprivation of the enjoyment of the luxury of fruit are the necessary accompaniments of poverty or local situation.

Again, in quite a large class of the maladies to which the human system is subject, an irregular and torpid condition of the peristaltic function of the intestine presents itself as a proximate cause of concomitant symptoms. *Aperients*, of all other remedies in the scope of medicine, are the least satisfactory in their action, the necessity for their occasional use growing into that of their constant employment and in increasing doses. For this imperfect remedy we could hope to find no more delightful substitute than we certainly do in the well-known and moderate effect of fresh and well-matured fruit.

For a liberal supply and infinite variety of healthy fruits, no local section of the Union can be considered superior to our own.

The cheerful life of the fruit culturist, as he busties among the plenteous and varied berry crops of the spring and summer harvests, amid the bending boughs of the luscious pear and golden peach; or in autumn lingers in the gorgeous trellises of the vineyard, laden with its purple clusters; or consigns the brilliant cranberry and tempting fruits of Mother Eve to their winter store-house:—this life, not only one of promise, but of fruition, may well hold out attractions to the weary denizen of the over-crowded metropolis as a vocation in every respect calculated to give relief to an over-tasked mind and body, and to afford that supply of free air, exercise and diet, so essential to the purchase and preservation of health and of happiness.







